

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED / ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		ATTORNEY'S DOCKET NUMBER P67551US0
INTERNATIONAL APPLICATION NO. PCT/FR00/02029	INTERNATIONAL FILING DATE 13 July 2000	US APPLICATION NO. (If known, see 37 CFR 1.5) 107030093
PRIORITY DATE CLAIMED 16 July 1999		
TITLE OF INVENTION A DEVICE FOR SMOOTH INTERACTIVE DIRECTIONAL CONTROL OF A COMPRESSED DIGITAL FILM, AND SOFTWARE FOR MANAGING THE DEVICE		
APPLICANT(S) FOR DO/EO/US Valentin LEFEVRE -and- Bruno UZZAN		

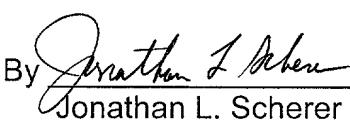
Applicant herein submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.

1. This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. A proper Demand for Internat'l. Preliminary Examination was made by the 19th month from earliest claimed priority date.
5. A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. has been transmitted by the International Bureau.
 - c. is not required, as the application was filed in the United States Receiving Office (RO/US)
6. A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. have been transmitted by the International Bureau.
 - c. have not been made; however, the time limit for making such amendments has NOT expired.
 - d. have not been made and will not be made.
8. A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. A translation of the annexes to the Internat'l. Preliminary Examination report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. An assignment document for recording. A separate cover sheet compliance with 37 CFR 3.28 and 3.31 is included.
13. A **FIRST** preliminary amendment.
 - A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. A substitute specification.
15. A change of power of attorney and/or address letter.
16. Other items or information:

International Search Report – EPO
 First Page of Publication
 International Preliminary Examination Report – in French with No Annexes
 English Translation of International Preliminary Examination Report
 English Translation of Text of the Drawings

US APPLICATION NO.(If known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER	
107030093	PCT/FR00/02029	P67551US0	
17. <input checked="" type="checkbox"/> The following fees are submitted:		CALCULATIONS PTO USE ONLY	
• Basic National Fee (37 CFR 1.492(a)(1)-(5)):			
Internat. prelim. examination fee paid to USPTO (37 CFR 1.492 (a) (1)) . . . \$710.00 No international preliminary examination fee paid to USPTO (37 CFR 1.492 (a) (2)) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) . . . \$740.00 Neither international preliminary examination fee (37 CFR 1.492 (a) (3)) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO) \$1040.00 International preliminary examination fee paid to USPTO (37 CFR 1.492 (a) (4)) and all claims satisfied provisions of PCT Article 33(2)-(4) \$100.00 Search Report prepared by the EPO or JPO (37 CFR 1.492 (a) (5)) \$890.00			
ENTER APPROPRIATE BASIC FEE AMOUNT =		\$ 890.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input checked="" type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).		\$ 130.00	
Claims	Number Filed	Number Extra	Rate
Total Claims	11 - 20 =	-0-	x \$18.00
Independent Claims	1 - 3 =	-0-	x \$84.00
Multiple Dependent Claim(s) (if applicable)			+ \$280.00
TOTAL OF ABOVE CALCULATIONS =		\$ 1020.00	
Reduction by 1/2 for filing by small entity , if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).		\$	
SUBTOTAL =		\$ 1020.00	
Processing fee of \$130 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f))		\$	
TOTAL NATIONAL FEE =		\$ 1020.00	
Fee of \$40.00 for recording the enclosed assignment (37 CFR 1.21(h)). Assignment must be accompanied by appropriate cover sheet (37 CFR 3.28, 3.31).		\$	
TOTAL FEES ENCLOSED =		\$ 1020.00	
		Amt. to be refunded: \$	
		Amt. charged: \$	
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>1020.00</u> to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. <u>06-1358</u> in the amount of \$ <u> </u> to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge my account any additional fees set forth in §1.492 during the pendency of this application, or credit any overpayment to Deposit Account No. <u>06-1358</u> . A duplicate copy of this sheet is enclosed.			
SEND ALL CORRESPONDENCE TO:			
JACOBSON HOLMAN PLLC 400 7th Street, N.W., Suite 600 Washington, DC 20004 202-638-6666		By  Jonathan L. Scherer Reg. No. 29,851	
CUSTOMER NUMBER: 00136			
JPH&S 3/95			

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Valentin LEFEVRE et al

Serial No.: New

Filing Date: January 15, 2002

For: A DEVICE FOR SMOOTH INTERACTIVE DIRECTIONAL CONTROL
OF A COMPRESSED DIGITAL FILM, AND SOFTWARE FOR
MANAGING THE DEVICE

PRELIMINARY AMENDMENT

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the above-
identified application as follows:

IN THE DRAWINGS

Please find attached a Letter to the Official Draftsman which
includes the proposed drawing changes for Figure 2, indicated in
red.

IN THE SPECIFICATION

Please insert the following sentence on line 1, immediately following the title:

--This is a nationalization of PCT/FR00/02029, filed July 13, 2000 and published in French.--

Please also add the Abstract of the Disclosure as found on the attached page.

IN THE CLAIMS

Please amend claim 7 as follows:

7. (amended) A method of operating a device according to claim 1, characterised in that it comprises a step of acquiring the speed and direction desired by a user, a first series of steps for determining the running speed of the pictures and a simultaneous second series of steps for determining the orientation from the desired speed and direction, and a step for displaying the thus-determined series of pictures.

REMARKS

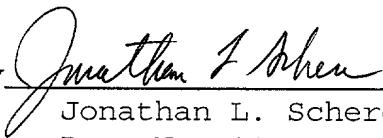
The foregoing Preliminary Amendment is requested in order to delete the multiple dependent claims, avoid paying the multiple dependent claims fee and place the application in better form for examination.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Early action on the merits is respectfully requested.

Respectfully submitted,

JACOBSON HOLMAN PLLC

By 
Jonathan L. Scherer

Reg. No. 29,851

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Atty. Docket: P67551US0
Date: January 15, 2002
JLS:jrc

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

7. (amended) A method of operating a device according to claim 1
~~any of claims 1 to 6~~, characterised in that it comprises a step
of acquiring the speed and direction desired by a user, a first
series of steps for determining the running speed of the pictures
and a simultaneous second series of steps for determining the
orientation from the desired speed and direction, and a step for
displaying the thus-determined series of pictures.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Valentin LEFEVRE et al

Serial No.: New

Filing Date: January 15, 2002

For: A DEVICE FOR SMOOTH INTERACTIVE DIRECTIONAL CONTROL
OF A COMPRESSED DIGITAL FILM, AND SOFTWARE FOR
MANAGING THE DEVICE

LETTER TO THE OFFICIAL DRAFTSMAN

Honorable Assistant Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Attached please find a copy of the drawing, Figure 2, in the
above-captioned application. The corrections to be made are
indicated in red ink.

Upon approval of the proposed drawing corrections, the
corrections will be entered into the formal drawings.

Respectfully submitted,
JACOBSON HOLMAN, PLLC

By: Jonathan L. Scherer
Jonathan L. Scherer
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Atty. Docket: P67551US0
Date: January 15, 2002
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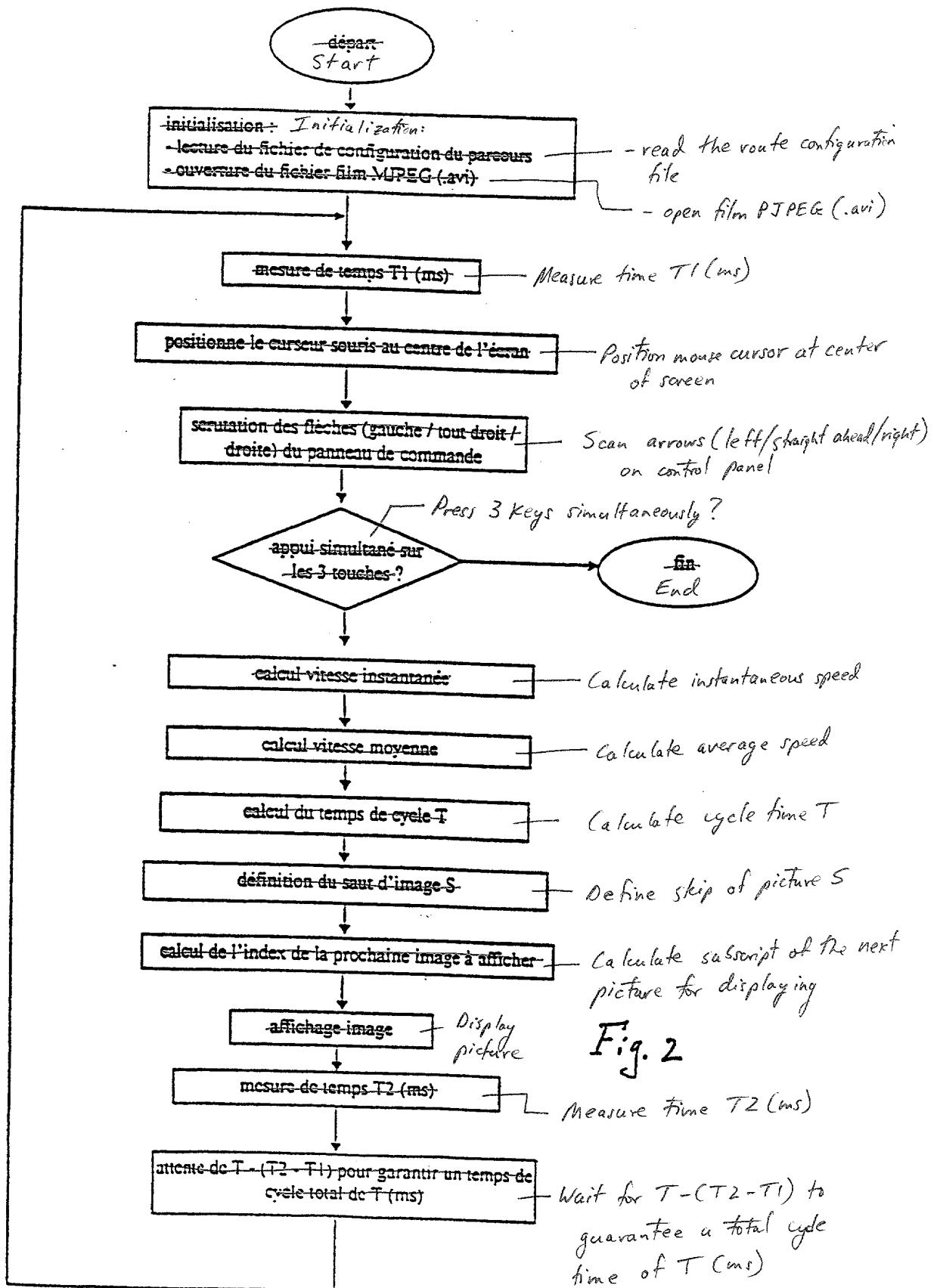


Fig. 2

3/pvt

WO 01/06514

PCT/FR00/02029

A device for smooth interactive directional control of a compressed digital film, and software for managing the device

The invention relates to a device for smooth interactive directional control of a compressed digital film, and software for managing the device.

Increasingly frequent use is nowadays made of films for presenting e.g. a flat or tourist travel or demonstrating equipment. This is usually done with a video display unit such as a television set or a computer monitor, but a spectator or user cannot vary the sequence of images.

More and more frequently, however, it appears that the user wishes to be able to adjust the running of the film by varying the speed so as to accelerate or slow down the succession of images, i.e. to run the film at the desired speed with smooth changes, or to choose the direction taken by the film.

When viewing a flat, for example, the user should be enabled to look at a particular room before the dining room or to return to the room before going to the kitchen.

In the more general case of a visit to a site, the user should be able to choose the direction he takes at certain crossings, e.g. to go straight ahead, to left or to right.

In a gymnasium it may be appropriate to show a user a picture of a forest or country track, for example, so as to encourage him when using a cardio-training apparatus such as a bicycle, mat, rowing machine, treadmill or the like.

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One aim of the invention accordingly is to provide a device for interactive control of a film, enabling the user at choice to modify the speed at which the pictures succeed on another in a film.

Another aim of the invention is to provide a said device enabling a single film to be viewed a number of times without the succession of pictures always being identical.

These aims, together with others which will appear hereinafter, are addressed by a device for fluid, interactive control of a compressed digital film, comprising a computer having a sound output, a video output, both connected to a display system, and an input connected to a direction-controlling means in series with a means for controlling the running speed of the film, the device according to the invention being characterised in that the direction-controlling means comprises a number of buttons each corresponding to a direction in space, and each enabling the computer to process the direction chosen by a user.

Preferably, the speed-control means is a lever which is operated by the user in order to unwind the film at a variable speed.

Advantageously, the speed-control means is a speed pick-up directly connected to a cardio-training apparatus.

In a first variant embodiment, the speed pick-up comprises a roller which is in contact with the moving part of the cardio-training apparatus and transmits the speed of rotation thereof to a toothed wheel situated between an infrared transmitter and an infrared receiver.

In a second variant embodiment, the speed pick-up comprises a magnet which moves at regular intervals in front of an induction coil providing information to the computer, which uses it to deduce the speed.

In a third variant embodiment, the speed pick-up comprises an optical pick-up co-operating with the moving part of the cardio-training apparatus.

The invention also relates to a program or software characterised in that it comprises a step of acquiring the speed and direction desired by a user, a first series of steps for determining the running speed of the images and a simultaneous second series of steps for determining the orientation from the desired speed and direction, and a step for displaying the thus-determined series of pictures.

Preferably use is made of a configuration file containing the following information:

- name of digital file to be opened in accordance with the filmed route,
- information regarding the nature of the route and branches thereof and regarding the possible choices of direction,
- speed at which the film has been shot, and
- recovery of the information relating to the type of speed pick-up used.

Advantageously, the instantaneous speed of a user is calculated as the average of the n preceding speeds V_i .

Preferably, the known information regarding the speed of motion of the camera when shooting the film and the number of pictures taken by the camera per second when running the film is used, in dependence on the speed to be simulated, to determine the jump S corresponding to the number of pictures to be skipped before each displayed picture and the time T corresponding to the time interval between two displayed pictures.

Advantageously, arrows indicating the directions to be chosen are overprinted on the film a few seconds before each crossing of the filmed route.

The following description, which is in no way limitative, should be read with reference to the accompanying drawings in which:

Fig. 1 is a block diagram of a device for interactive direction control of a film in accordance with the invention;

Fig. 2 is a flow chart of the software for working the device in Fig. 1, and

Fig. 3 is an example of a directional diagram for a route or orientation device.

A device for interactive directional control of a compressed digital film in accordance with the invention comprises, as shown in Fig. 1, a computer 1 having a sound output 2 and a video output 3 both connected to a display system 4, and an input 5 connected to a direction-controlling means 6 in series with a means for controlling the speed 7 at which a displayed film is run.

The display system 4 is e.g. a television screen, a computer monitor, a plasma or liquid-crystal screen, or more generally any picture-restoring system for displaying the pictures in a film, e.g. shot on location, facilitating visual immersion of a user.

The computer 1 has a coding and decoding system called CODEC for decompression of digital pictures. The CODEC is chosen inter alia from among known systems such as MJPEG (Motion Joint Picture Expert Group) or MPEG (Motion Picture Expert Group).

These various CODECs can be used with or without material acceleration. The picture-decompressing device used in practice is generally either a very powerful general-purpose processor or a specific card dedicated to picture decompression.

The computer 1 should also be capable of storing the digital film. More particularly, use may be made of the following storage media: hard discs, optical compact discs (CD-ROMs) or digital video discs (DVDs).

The direction-controlling means 6 can comprise a number of buttons or levers each corresponding to a direction in space. The minimum number of buttons is three, i.e. a left button, a right button and a straight-ahead button. Pressure on a button will cause the computer to store the direction chosen by the user.

For example, a few seconds after each crossing of the filmed route, the computer prints arrows over the film informing the user that he must choose a direction in order to move further forward. The number of arrows displayed is equal to the number of possible directions, and the arrows extend in the directions which they indicate.

The speed-controlling means 7 is a lever which, when operated by a user, can run a film at a variable speed which the user determines directly or indirectly.

The device 7 may also be a speed pick-up directly connected to a cardio-training apparatus.

In a first variant embodiment, the speed pick-up comprises a roller which is in contact with the moving part of the cardio-training apparatus and transmits the speed of rotation thereof to a toothed wheel situated between an infrared transmitter and an infrared receiver. A pick-up of this kind can be called a roller pick-up.

In a second variant embodiment, the speed pick-up comprises a magnet which moves at regular intervals in front of an induction coil providing information to the computer 1, which uses it to deduce the speed. A pick-up of this kind can be called a magnetic pick-up.

In a third embodiment, the speed pick-up comprises an optical pick-up which co-operates with the moving part of the cardio-training apparatus; for example the moving part can comprise a mat on which lines are disposed at regular intervals and read by the optical pick-up.

The computer 1 comprises software which loads the film selected by a user, receives information transmitted by the speed pick-up 7, and manages the dialogue with the user by displaying the film pictures at the right speed and in the direction chosen by the user. The software must have real-time characteristics so as not to produce jerky sequences of pictures which are unpleasant to watch. The simulated rate of advance should therefore be as smooth as possible.

The software, the flow chart of which is shown in Fig. 2, uses a configuration file containing the following information:

- name of digital file to be opened in accordance with the filmed route,
- information regarding the nature of the route and branches thereof and regarding the possible choices of direction,
- speed at which the film has been shot, and
- recovery of the information relating to the type of speed pick-up used, i.e.:
 - characteristics of the lever (where a lever is used),
 - radius of the roller of the speed pick-up (where a roller pick-up is used) and
 - characteristics of the magnetic pick-up (in the case of a magnetic pick-up).

The computer 1 must record an instantaneous speed, using one of the said three pick-ups. In a preferred embodiment of the invention, the pick-up comprises a roller having an axis of rotation coupled to the electronics originating from a commercial mouse. Rotation of the roller will cause the pointer to rotate along

the X axis. In this preferred embodiment, the instantaneous speed V_i is calculated by the method described hereinafter.

Let

- R be the radius of the roller,
- nb_pixels be the number of pixels travelled by the mouse cursor since the previous cycle,
- $nb_pixels_per_revolution$ be the number of pixels travelled during a complete revolution of the roller,
- T be the cycle time and
- $nb_radians$ be the number of radians travelled by the roller during the time T .

Under these conditions, the instantaneous speed is determined by using the following formula: $V_i = (nb_radians \times R) / T$, since the value of the curved abscissa is $(nb_radians \times R)$ and with

$$nb_radians = (nb_pixels \times 2\pi) / (nb_pixels_per_revolution).$$

The instantaneous speed of the user is therefore:

$$V_i = (nb_pixels \times 2\pi R) / (nb_pixels_per_revolution \times T).$$

The instantaneous speed V_i , which can alternatively be obtained by one of the other methods of speed pick-up described hereinbefore, is stored and an average speed is determined, using the n previous instantaneous speeds. The result is low-pass filtering of the instantaneous speed (in practice n is equal to 5, giving a very satisfactory compromise between filtering and response time).

As already mentioned, the computer 1 comprises a video decompression CODEC. This technology has the following three advantages in particular:

- average time for decompressing a picture is practically constant,

- indexed access to any picture in the film,
- pictures can be displayed at a rate faster than the television standard. In practice, up to 50 pictures per second can be shown.

A variable running or unwinding speed is obtained by varying the following two parameters:

- T: time between consecutive display of two consecutive pictures of the route, and
- S: number of pictures jumped between each picture displayed.

To calculate the time T, it will be assumed that:

- dt_film is the time interval between two pictures when shooting the film,
- v_film is the speed at which the film was shot,
and
- v is the speed to be simulated.

In a first step, S is taken to be 1, i.e. a speed is to be simulated without skipping pictures in the film.

We therefore have the following series of equations:

$v = dx/T$ in which dx is an elementary displacement,
 $v_{film} = (dx_{film}/dt_{film})$, but dx_{film} is equal to dx since the elementary displacement is smallest if no picture is skipped ($S = 1$).

Consequently $dx = v_{film} \times dt_{film}$ and $v = (v_{film} \times dt_{film}) / T$, so that T is:

$$T = (v_{film} \times dt_{film}) / v$$

In practice, using a CCIR (International Radio and Television Consultative Committee) camera, the value of dt_{film} is 40 milliseconds (ms).

However this formula for T is not very satisfactory, since if v increases greatly with respect to v_{film} , T will decrease greatly, as when a speed of 80 km/h is to be simulated whereas the film was shot at 5 km/h.

There is therefore a special $T_{THRESHOLD}$ below which T cannot be reduced.

In practice, $T_{THRESHOLD}$ is about 10 ms.

In order nevertheless to simulate very high speeds, pictures in the original film are skipped. This is done by using a recursive algorithm (presented hereinafter in the DESCARTES form) to calculate the jump S and the time T :

INITIALISATION: $S = 1$, $T_{INITIAL} = T$ (calculated by the formula hereinbefore).

AS LONG AS ($T < T_{THRESHOLD}$)

OPERATION

$S = S + 1$

$T = T_{INITIAL} \times S$

END OF OPERATION

END AS LONG AS

The subscript of the next picture for display is calculated, beginning with an initialisation function.

The software stores the route logic and the order in which the "route ends" are stored in the file. In addition, for each "route end", the software must store the number of pictures therein and the subscript of the starting picture in the complete file. Accordingly each picture in a digital film is given a subscript corresponding to the position of the picture in the film. Processing of the choice

of direction by the software can be understood most clearly by taking the following simple example shown in Fig. 3.

In this example, the filmed route comprises five "route ends", the logic of which is stored by the software during the initialisation phase, i.e.:

P1 to P4: left

P2 to P5: straight ahead

P2 to P3: right

P3 to P2: right

P3 to P1: straight ahead

P4 to P2: right

P4 to P1: left

P5 to P4: right

Also during the initialisation phase, the software stores the order in which the "route ends" are stored in the file (avi).

P1	P2	P3	P4	P5
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Example of a route file

The software stores the number of pictures making up each "route end" and the starting picture in the complete file.

The algorithm for calculating the next picture for displaying is as follows, it being agreed that:

- P is the present route,
- P_G is the route corresponding to a left turn after the present route,
- P_TD is the route corresponding to travel straight ahead after the present route and

- P_D is the route corresponding to a right turn after the present route (note: P_G, P_TD and P_D need not be defined).

OPERATION

Picture_subscript = subscript_preceding_picture + S

END OF OPERATION

If (picture_subscript > number_of_pictures_in_present_route)

If user_choice = LEFT

 picture_subscript = starting subscript (P_G)

END if

If user_choice = STRAIGHT AHEAD

 picture_subscript = starting subscript (P_TD)

END IF

If user_choice = RIGHT

 picture_subscript = starting subscript (P_D)

END if

END if

When running the film, the following requirements must be taken into account: the film must be as smooth as possible with stable movement of cameras, i.e. without jerks, visible changes of trajectory, or vibration. These conditions must be fulfilled in their entirety, since the films will subsequently be replayed at faster speeds.

As the skilled man will understand, as a result of the invention the film will run in dependence on the effort made by the user, who will also choose his own itinerary, avoiding any fatigue and any passivity.

Claims:

1. A device for fluid, interactive control of a compressed digital film, comprising a computer (1) having a sound output (2), a video output (3), both connected to a display system (4), and an input (5) connected to a direction-controlling means (6) in series with a means (7) for controlling the running speed of the film, characterised in that the direction-controlling means (6) comprises a number of buttons each corresponding to a direction in space, and each enabling the computer (1) to process the direction chosen by a user.
2. A device according to claim 1, characterised in that the speed-control means (7) is a lever which is operated by the user in order to unwind the film at a variable speed.
3. A device according to claim 2, characterised in that the speed-control means (7) is a speed pick-up directly connected to a cardio-training apparatus.
4. A device according to claim 3, characterised in that the speed pick-up comprises a roller which is in contact with the moving part of the cardio-training apparatus and transmits the speed of rotation thereof to a toothed wheel situated between an infrared transmitter and an infrared receiver.
5. A device according to claim 3, characterised in that the speed pick-up (7) comprises a magnet which moves at regular intervals in front of an induction coil providing information to the computer (1), which uses it to deduce the speed.
6. A device according to claim 3, characterised in that the speed pick-up comprises an optical pick-up co-operating with the moving part of the cardio-training apparatus.
7. A method of operating a device according to any of claims 1 to 6, characterised in that it comprises a step of acquiring the speed and direction

desired by a user, a first series of steps for determining the running speed of the pictures and a simultaneous second series of steps for determining the orientation from the desired speed and direction, and a step for displaying the thus-determined series of pictures.

8. A method according to claim 7, characterised by use of a configuration file containing the following information:

- name of digital file to be opened in accordance with the filmed route,
- information regarding the nature of the route and branches thereof and regarding the possible choices of direction,
- speed at which the film has been shot, and
- recovery of the information relating to the type of speed pick-up used.

9. A method according to claim 7, characterised in that the instantaneous speed of a user is calculated as the average of the n preceding speeds V_i .

10. A method according to claim 7, characterised in that the known information regarding the speed of motion of the camera when shooting the film and the number of images taken by the camera per second when running the film is used, in dependence on the speed to be simulated, to determine the jump S corresponding to the number of pictures to be skipped before each displayed picture and the time T corresponding to the time interval between two displayed pictures.

11. A method according to claim 7, characterised in that arrows indicating the directions to be chosen are overprinted on the film a few seconds before each crossing of the filmed route.

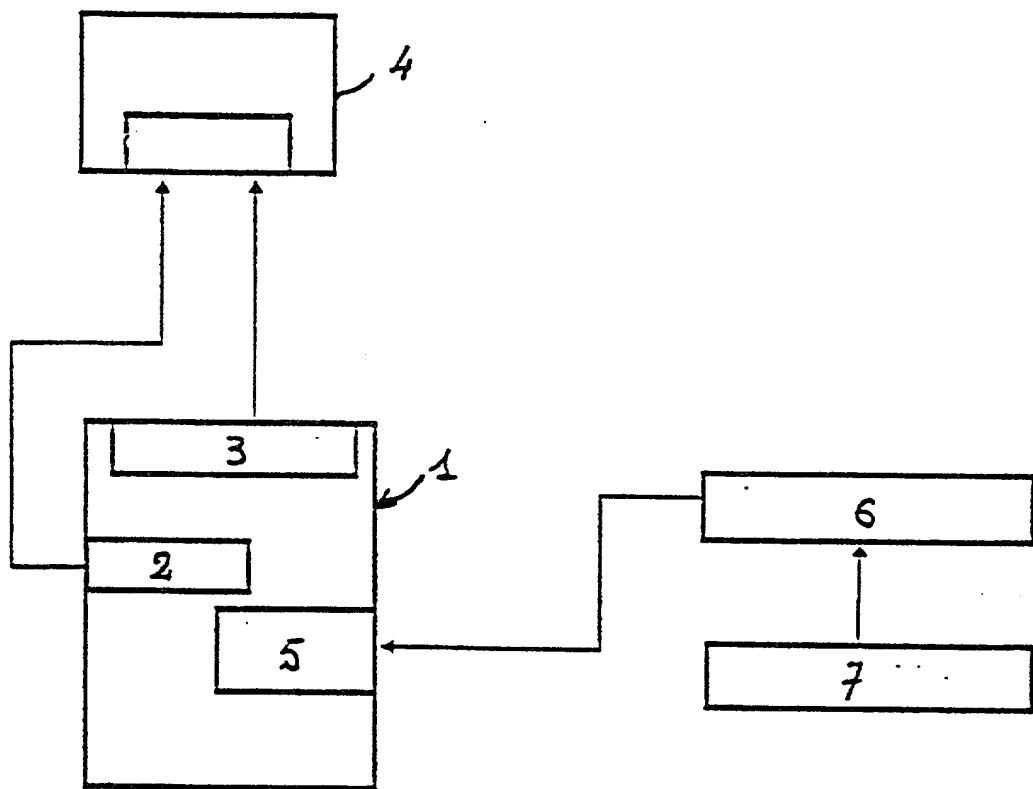
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ABSTRACT OF THE DISCLOSURE

The invention concerns a device for interactive and smooth direction control in a compressed digital film. It comprises a computer (1) equipped with a sound output (2), and a video output (3), both connected to a display system (4), and an input (5) connected in series to means for controlling the direction (6) with means for controlling the speed (7) of the motion of the film. The computer (1) comprises a software for managing said device. The invention is useful for interactive presentation of a film concerning travel, an apartment, demonstration of an equipment and the like.

10/030093

Fig. 1.



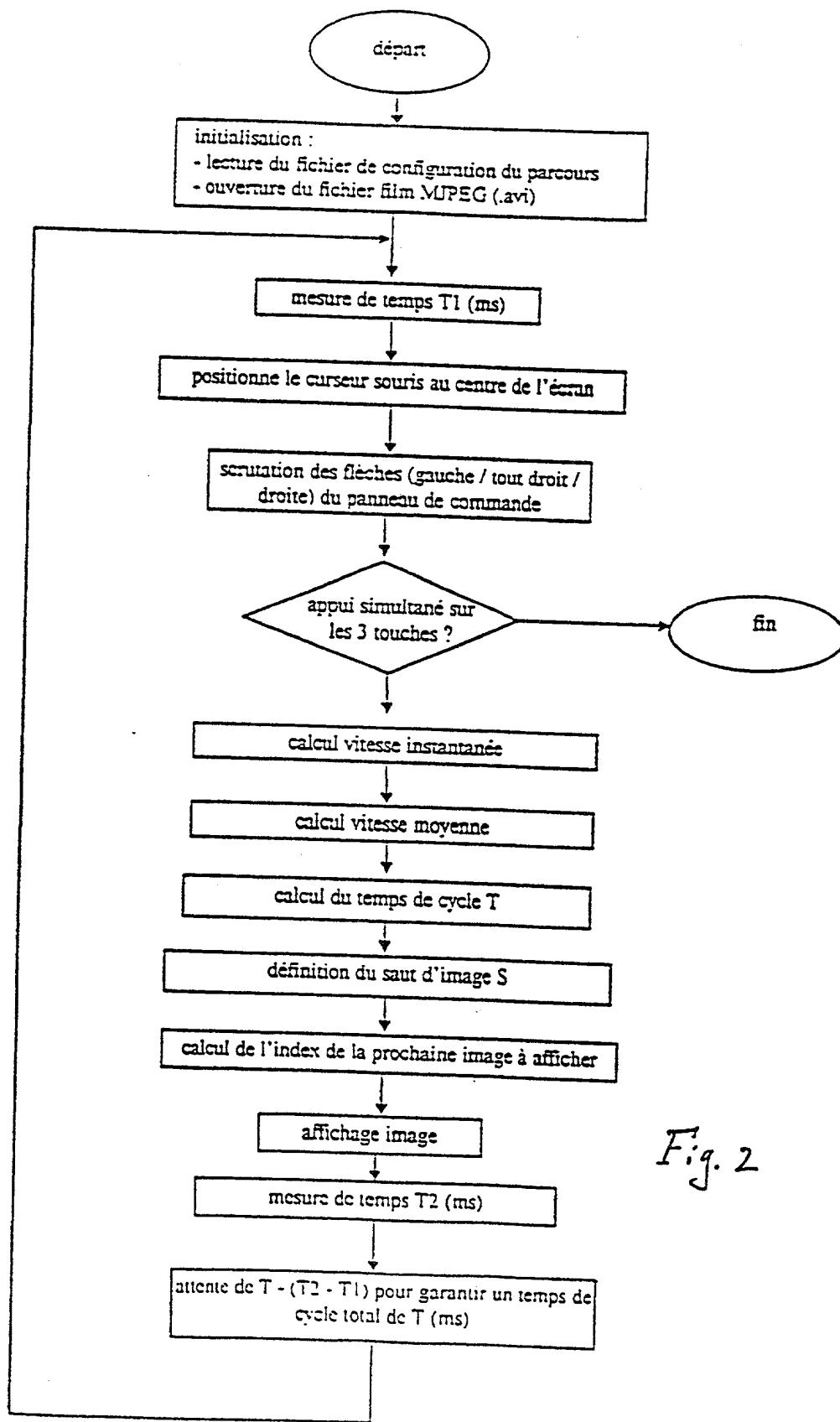
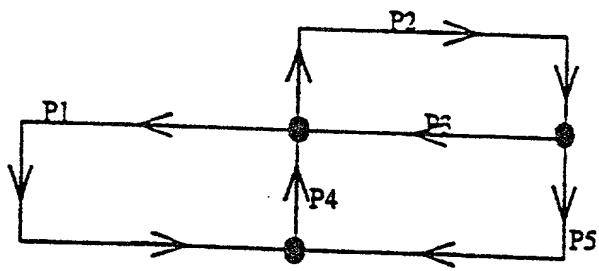


Fig. 2

10/030093

Fig. 3



**DECLARATION
AND POWER OF ATTORNEY
U.S.A.**

ALL PATENTS, INCLUDING DESIGN
FOR APPLICATION BASED ON PCT; PARIS CONVENTION;
NON PRIORITY; OR PROVISIONAL APPLICATIONS

FOR ATTORNEYS' USE ONLY

ATTORNEYS' DOCKET NO.

5674/P67551US0

As a below named inventor, I declare that my residence, post office address and citizenship are stated below next to my name, the information given herein is true, that I believe that I am the original, first and sole inventor (if only one name is listed at 201 below), or an original, first and joint inventor (if plural inventors are named below at 201-203, or on additional sheets attached hereto) of the subject matter which is claimed and for which patent is sought on the invention entitled:

**A device for smooth interactive directional control of a compressed digital film,
and software for managing the device**

which is described and claimed in:

<input checked="" type="checkbox"/> PCT International Application No. <u>PCT/FR00/02029</u>	filed <u>13 July 2000</u>
<input type="checkbox"/> the specification in application Serial No. _____	filed _____

(if applicable) and amended on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 (a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

<u>99 09274</u>	<u>FRANCE</u>	<u>16 July 1999</u>	Priority Claimed
(Number)	(Country)	(Day/Month/Year Filed)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
_____	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
_____	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below:

Application No. _____	Filing Date _____	Application No. _____	Filing Date _____
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I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)
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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys (Registration No.) to prosecute this application, receive and act on instructions from my agent, and transact all business in the Patent and Trademark Office connected therewith. HARVEY B. JACOBSON, JR. (20,851); JOHN CLARKE HOLMAN (22,769); MARVIN R. STERN (20,640); ALLEN S. MELSER (27,215); MICHAEL R. SLOBASKY (26,421); JONATHAN L. SCHERER (29,851); IRWIN M. AISENBERG (19,007); WILLIAM E. PLAYER (31,409); YOON S. HAM (45,307) and NATHANIEL A. HUMPHRIES (22,772)

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*Inventor(s) name must include at least one unabbreviated first or middle name.

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POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE OR COUNTRY
ZIP CODE			

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under section 1001 of Title 18 of the United States Code; and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201*	SIGNATURE OF INVENTOR 202*	SIGNATURE OF INVENTOR 203*
DATE <u>03/11/2002</u>	DATE <u>03/11/2002</u>	DATE

Additional inventors are named on separately numbered sheets attached hereto.